The Wilderness Society
Northern Alaska Environmental Center[1]

Bud C. Cribley, State Director
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Alaska State Office
222 West Seventh Avenue, #13
Anchorage, Alaska 99513

9 December 2015

Re: Achieving the mitigation hierarchy in the National Petroleum Reserve – Alaska

Dear Mr. Cribley,

Thank you for your continued work on developing an effective Regional Mitigation Strategy (RMS or Strategy) for the National Petroleum Reserve – Alaska (NPR-A or Reserve). As we have discussed with you before, the RMS is an important and necessary document for the sound stewardship of the NPR-A. The RMS has the potential to provide greater certainty and predictability for the oil industry, as well as for conservation and subsistence interests. To date we have sent you considerable amount of material on how to achieve a true landscape-level approach for the RMS, and how you can use existing authorities to offset the unavoidable impacts of land use changes. As the Strategy's development moves forward, we encourage you to utilize the content provided within these documents.

Currently, the management of conservation and subsistence values in the NPR-A isnot assured or adequate. Durable and necessary conservation actions have yet to balance against the effects of oil exploration and long-term impacts of development activities. Today, almost 1.8 million acres of the NPR-A have been leased to private corporations. These leases commit lands to companies for ten or more years for exploration and development activities, and when pursued, these activities can continue on for many decades. Ice and snow roads are also being permitted and constructed through designated Special Areas, including through the overwintering grounds of the vulnerable Teshekpuk Caribou Herd. With these roads, winter staging activities are occurring on the edges of Smith Bay, an important area for the threatened polar bear, vital fish rearing habitat, and the largest of only a few snow goose nesting colonies in western North America.[2]

[1] Letter prepared with assistance from Trustees for Alaska.
[2] See: http://www.north-slope.org/departments/wildlife-management/studies-and-research-projects/migratory-birds/geese (Dec. 2, 2015).

Finally, oil production with significant infrastructure has been approved; and areas intended to be conserved and "off-limits" have already been compromised when viable alternatives existed. The effects of development are compounding and their cumulative impacts have not yet been offset with any form of durable protections for conservation and subsistence values. The RMS should fulfill this obligation.

In this letter we offer an initial proposal for how the BLM should utilize administrative directives, including the recent Presidential Memorandum, and the whole "mitigation hierarchy" to effectively complete the NPR-A's RMS. Utilizing the principles and goals of the entire hierarchy will provide necessary balance and certainty for conservation, subsistence, and industry interests. We begin our comments with some background on the NPR-A and an introduction to the Department of the Interior and BLM's policy directives for mitigation. Then, in the latter portions of the document we discuss the various tiers of the hierarchy, their importance to the NPR-A, and how they should be realized at a landscape-level through the RMS process.

I. NPR-A Background

A. BLM's Mandate in the Naval Petroleum Reserves Production Act

In the Naval Petroleum Reserves Production Act of 1976 (NPRPA),[3] Congress expressly recognized that the unique cultural, natural, fish and wildlife, scenic and historical values of the Reserve should be protected, and transferred jurisdiction of the nearly 23 million acre Reserve from the Secretary of the Navy to the Secretary of the Interior.[4] Congress also required the Secretary of the Interior to give special protection to a number of so-called "Special Areas," specifically mentioning Teshekpuk Lake and the Utukok River Uplands,[5] and to initiate studies of the Reserve to determine what additional protections should be recommended to Congress.

The Secretary is *fully* authorized in the NPRPA and implementing federal regulations to set aside areas that contain "significant subsistence, recreational, fish and wildlife, or historical or scenic value."[6] The regulations published in 1977 pertaining to the NPRPA further clarified "Management and Protection" direction for the Reserve, directing that "Maximum protection measures shall be taken on all actions within the Utukok River Uplands, Colville River and Teshekpuk Lake Special Areas, and any other special areas identified by the Secretary as having significant subsistence, recreational, fish and

[3] 42 U.S.C. 6501 *et seq*.
[4] 42 U.S.C. §§ 6502-03.
[5] Naval Petroleum Reserves Production Act of 1976, Pub. L. 94-258 § 104(b) Apr. 5, 1976. ("Any exploration with the Utukok River, the Teshekpuk Lake areas, and other areas designated by the Secretary of the Interior containing any significant subsistence, recreational, fish and wildlife, or historical or scenic value, shall be conducted in a manner which will assure the maximum protection of such surface values to the extent consistent with the requirements of the Act for the exploration of the reserve.") Public Law 96-514 also held that exploration or production follow Sec. 104(b).
[6] 42 U.S.C. § 6504.

wildlife or historical or scenic value."[7] With passage of the NPRPA, Congress clearly provided the Secretary with the authority to protect high value areas within the Reserve and gave the Secretary the discretion to determine how best to use the lands within the Reserve.

B. NPR-A Integrated Activity Plan

BLM finalized the first-ever management plan for the entire 23 million acre NPR-A in 2013. BLM's IAP is a balanced plan that closes 11 million acres to oil and gas leasing while still allowing industry access to 72 percent of the reserve's economically recoverable oil. A portion of the 11 million acres that are unavailable to leasing, all of which are in Special Areas, also are restricted from non-subsistence-use permanent infrastructure. The IAP defined Best Management Practices as well, which were developed to minimize impacts from oil and gas exploration and development on the 11.8 million acres of NPR-A lands in the IAP that are open to these activities. The IAP will likely remain in effect for approximately 15 to 20 years.

The final IAP designated a total of five Special Areas, including the new Peard Bay Special Area. The IAP also significantly increased the size of the Teshekpuk Lake and Utukok River Uplands Special Areas. The total acreage of Special Areas in the NPR-A increased from 8.3 million acres under former plans to 13.35 million acres in the 2013 IAP. These Special Areas contain important wildlife habitat for caribou, migratory birds, polar bears, wolves, and birds.

The IAP took an enormous step toward protecting important habitat and prioritizing areas vital to wildlife, subsistence livelihoods, and to our nation's conservation heritage, while also allowing access to oil and gas reserves. However, as we have already seen with the Greater Mooses Tooth One final decision, Best Management Practices, setback areas, and other restrictions in the IAP can be compromised when the agency is permitting for oil and gas activities. Thus the conservation measures afforded in the IAP are not durable and likely will not be in effect for the life of the developments or their impacts now permitted within the NPR-A. The RMS, however, can provide opportunities for durable conservation and should fulfill this obligation.

***Recommendations*:**

- BLM should follow the mandate of the NPRPA to ensure the maximum protection of the NPR-A's surface values within the final Regional Mitigation Strategy.
- The Regional Mitigation Strategy should build on the 2013 Integrated Activity Plan to ensure durable protections for the region's highest conservation and subsistence values.

[7] 43 C.F.R. § 2361.1(c).

II. Introduction to Mitigation

In addition to mitigation requirements under the Federal Land Policy and Management Act and the National Environmental Policy Act, numerous other policies and guidance documents direct the BLM to require mitigation and specify how mitigation must be employed. These documents provide extremely helpful sideboards for what must be included within an RMS. They include the Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (2015);[8] Secretarial Order 3330, Improving Mitigation Policies and Practices of the Department of the Interior (2013);[9] the follow-up report entitled *A Strategy for Improving the Mitigation Policies and Practices of The Department of the Interior* (2014);[10] the Department of the Interior's Landscape-Scale Mitigation Manual (2015);[11] and BLM's Draft Regional Mitigation Manual (2013).[12]

While we will be describing key elements of these policies within the NPR-A context in the latter portions of this letter, below are important features that were emphasized most recently in the 2015 Presidential Memorandum on Mitigation and the 2015 Department of the Interior Mitigation Manual.

- Landscape-scale approach: land use planning for conservation and energy development as well as analysis of proposed development and consideration of mitigation must use a landscape-scale approach to focus development in low-conflict areas and prioritize conservation in areas with important and sensitive resources and values.
- Mitigation hierarchy: the mitigation hierarchy of avoid, minimize, and offset through compensatory mitigation must be employed sequentially, with an emphasis on avoidance as the most important and effective step in the hierarchy.
- "Irreplaceable natural resources": avoidance is the most appropriate tool for addressing "irreplaceable natural resources," "resources recognized through existing legal authorities as requiring particular protection from impacts and that because of their high value or function and unique character, cannot be restored or replaced."
- No net loss of important resources and values: mitigation must achieve a goal of no net loss of important resources and values, with a net benefit goal as required or appropriate.

[8]Available at: https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related

[9]Available at: https://www.doi.gov/sites/doi.gov/files/migrated/news/upload/Secretarial-Order-Mitigation.pdf

[10]Available at: https://www.doi.gov/sites/doi.gov/files/migrated/news/upload/Mitigation-Report-to-the-Secretary_FINAL_04_08_14.pdf

[11]Available at: https://www.doi.gov/sites/doi.gov/files/uploads/TRS and Chapter FINAL.pdf

[12]Available at: http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2013.Par.57631.File.dat/IM2013-142_att1.pdf

- Climate change impacts and resilience: agencies must identify and promote mitigation measures that help address climate change impacts and resilience.
- Compensatory mitigation standards: compensatory mitigation (generally comprising of acquisition, restoration or preservation of resources and values) must be:
    - Durable: protected against non-conforming uses like development and lasting as long as the impacts;
    - Additional: demonstrably new conservation benefits that would not occur without mitigation;
    - Be developed based on the best available science: including for determining equivalency of impacts and mitigation benefits;
    - Provide for public transparency: including tracking locations of impacts and mitigation actions; and
    - Include monitoring and adaptive management.
- Promotion of investment by non-profit and private sectors in advance of conservation: agencies must promote the creation of mitigation banks and other structures that provide conservation benefits from compensatory mitigation before development occurs and increase permitting efficiency by allowing developers to purchase credits to offset their impacts.

Recommendation:

- BLM must ensure that the NPR-A's RMS is consistent with Department of the Interior mitigation policies and guidance, including those described and referenced above.

III. Mitigation Hierarchy

Since 2013, and as mentioned above, the Department of the Interior has been actively advancing mitigation policies across the nation's land management agencies. A focus of these efforts has been the Department of the Interior and the BLM's use of the "mitigation hierarchy". This framework offers a constructive way to manage multiple values across large, intact landscapes and to ensure that special natural areas and landscape-level processes are protected. Such goals are particularly relevant to the NPR-A, the nation's largest single administrative land unit and an almost entirely undisturbed ecosystem.

In the following, section we address the three tenants of the mitigation hierarchy: avoidance, minimization, and compensatory mitigation. Generally, we address these features at a landscape-level. Within each of these tiers we discuss their importance to the NPR-A's Regional Mitigation Strategy and how these goals and objectives can be effectively achieved.

1. Avoidance

Durable avoidance is the foundation of successful mitigation. Avoidance is the first and most important tier of the mitigation hierarchy. Without avoidance, the many goals of mitigation will not be accomplished. While avoidance can be achieved at the landscape and the project level, for the purposes of these comments, we will be primarily focusing on avoidance at the landscape-level.

A. Importance of avoidance for regional mitigation success

As described within the Department of the Interior's policies, mitigation has many goals and objectives. These goals include: providing certainty and predictability to industry, moving past project-by-project management to improve the permitting process, providing certainty for important conservation areas and interests, and reducing conflict between stakeholders. At the core of achieving all of these goals is avoidance.

Avoidance is the crucial first step of the mitigation hierarchy because it provides the initial and necessary certainty that all stakeholders need. Certainty for industry is largely premised on where development can occur. Here, industry can make more informed business decisions by knowing where they can and cannot develop (including access to) resources. In the NPR-A, industry certainty largely comes in the form of leases which can guarantee certain activities for a definite period of time. Likewise, certainty for conservation interests largely stems from adequate and durable protection of core natural areas. Identifying and protecting high value environmental areas is necessary for conservation organizations and subsistence users to be comfortable and confident with how public lands are stewarded. Unlike oil and gas leases, there is currently no equivalent form of certainty provided to conservation and subsistence values in the NPR-A. Without any true avoidance, there is a greater likelihood for conflict.

The Record of Decision (ROD) for the Greater Mooses Tooth One (GMT-1) project, the first permitted commercial oil production in the NPR-A, also includes constructive language pertaining to avoidance within the RMS. The ROD calls for the "identification of opportunities for avoidance of or additional protection of special areas" as an element that may be included within the Strategy. Such an inclusion within the ROD speaks to the high importance of avoidance. For the NPR-A, the overall success and goals of mitigation warrant the inclusion of important avoidance areas within the final RMS.

B. Department of the Interior policy on avoidance

Avoidance is intended to identify and protect areas of high conservation value. One of the central features of Secretarial Order 3330, among other Department of the Interior and BLM policies, is an emphasis on protecting areas of high conservation value. The Secretarial Order, for example, specifically calls for "the use of a landscape-scale approach to identify and facilitate investment in key conservation priorities in a region." The recent Department of the Interior Departmental Manual on Implementing Mitigation at the Landscape-scale (Manual) echoes this sentiment and states: "Avoidance should

also be sought for resources and their values, services, and functions with protective legal mandates and those considered important, scarce, or otherwise suitable to achieve goals as identified through landscape-scale strategies, plans, and approaches." With a goal of the NPR-A's RMS to "maintain functioning habitat necessary to sustain fish and wildlife species abundance and distribution,"[13] areas for durable avoidance should be identified and incorporated into the final document.

For the NPR-A's RMS, avoidance is a crucial step for protecting high value conservation and subsistence resources in the region. It is well known that there are significant hydrocarbon resources in certain portions of the NPR-A, but a variety of laws are intended to protect the natural values of the region for conservation and subsistence purposes. Exploring and producing oil and gas resources, particularly in a rapidly changing climate, cannot come at the expense of the region's globally significant natural resources and unique subsistence ways of life.

As discussed above, the National Petroleum Reserve Production Act (NPRPA) directed BLM to identify and protect Special Areas and values in the NPR-A, and gave the Secretary full authority to implement federal regulations to set aside areas that contain "significant subsistence, recreational, fish and wildlife, or historical or scenic value."[14] The regulations published in 1977 pertaining to the NPRPA further clarified "Management and Protection" direction for the Reserve, directing that "Maximum protection measures shall be taken on all actions within the Utukok River Uplands, Colville River and Teshekpuk Lake Special Areas, and any other Special Areas identified by the Secretary as having significant subsistence, recreational, fish and wildlife or historical or scenic value."[15] With passage of the NPRPA, Congress clearly provided the Secretary with the authority to protect high value areas within the Reserve and gave the Secretary the discretion to determine how best to steward the lands within the Reserve.

C. Irreplaceable natural resources

The recent Presidential Memorandum calls for the protection of "irreplaceable natural resources." We believe that many of the values of the northeast NPR-A have irreplaceable character; and thus, warrant lasting avoidance measures. The Teshekpuk Lake Special Area is an arctic wetlands complex of global significance. Bird species from every continent use the region to breed and raise their young. This unique arctic wetland ecosystem does not exist anywhere else in the United States or the world. Similarly, the Colville River Special Area is a system that is inextricably linked to the ecological health of the region. Draining approximately one third of the entire North Slope, the Colville River plays an important role in the region's ecological functions. Without a healthy watershed, a significant portion of the entire region's ecology has the potential to be negatively impacted. The Teshekpuk Lake and Colville River Special Areas are irreplaceable values that cannot be restored or replaced and BLM has an obligation to protect these resources by ensuring lasting avoidance.

[13] See: Greater Mooses Tooth One Record of Decision, February 2015.
[14] 42 U.S.C. § 6504(a).
[15] 43 C.F.R. § 2361.1(c).

Moreover, the region's natural systems provide for the unique subsistence way of life that exists in few places on the planet. Subsistence is dependent on a healthy and functioning ecosystem to provide abundant levels of wild resources. Subsistence resources and practices are directly connected to the landscape and its natural resources. Resources closely tied to traditional cultures also cannot be restored or replaced. The significance of this connection should not be overlooked and BLM should take steps to avoid areas that are irreplaceable to subsistence resources and practices.

Additionally, to further underscore the nature of the irreplaceable natural resources in the northeast region of the NPR-A, a recent study suggests that the NPR-A contains highly valued ecosystem conditions and type, namely intact freshwater and wetlands systems.[16] The results of this study – a meta-analysis -- suggest that the NPRA's northeast region, which includes both the Teshekpuk Lake Special Area and the Colville River watershed, contains highly-valued ecosystem types, and these combined with the wilderness character of the region yield a higher value and greater willingness to pay for preservation. By avoiding habitat degradation of the area and providing durable conservation for the unique and primarily undisturbed freshwater systems of the Teshekpuk Lake and Colville River Special Areas, BLM would protect a unique and highly valued American resource.

D. Prioritizing avoidance areas

The NPR-A's 2013 Integrated Activity Plan (IAP) offers an excellent starting point for determining areas that should be avoided. The IAP identified resources and values that are worthy of protection by designating formal "Special Areas" and identifying other areas, such as the Fish Creek buffer, to avoid. The Teshekpuk and Colville River Special Areas are recognition of the region's rich natural resources, and areas that are important to sustain subsistence resources and practices. However, true avoidance has not been achieved within these areas. Areas that are unavailable for leasing and permanent non-subsistence infrastructure only cover a small portion of the Teshekpuk Lake Special Area. However, while some may consider these tracts "avoidance areas", these tracts lack durable protections and can be changed within the next Integrated Activity Plan or with a future development project. As shown by the decision to waive the Fish Creek buffer protections for GMT-1, while the IAP identifies areas to avoid and protect, it does not guarantee durable protections for those areas. Moreover, these tracts do not adequately capture all areas that should be avoided to maintain conservation values or to mitigate against impacts.

The Wilderness Society is actively working to prioritize conservation values in a warmer and uncertain climate to inform landscape-scale mitigation planning in Alaska's rapidly changing Arctic. To better help inform our understanding of areas that have irreplaceable

[16] Valuing type and scope of ecosystem conservation: A meta-analysis;
Journal of Forest Economics, January, 2015; Evan Hjerpe, Anwar Hussain, Spencer Phillips; available at: http://www.journals.elsevier.com/journal-of-forest-economics/most-downloaded-articles/

natural resources and that warrant avoidance, science staff are using data from the North Slope Rapid Ecoregional Assessment (REA) and other sources to map and model values across the landscape. We anticipate this geographical analysis will be a constructive tool to assist in prioritizing the protection of ecosystem and subsistence values in a changed climate. This effort likely will be completed in the coming months. (For a lengthier summary of these efforts and how they may constructively inform avoidance areas, see Appendix A.)

E. Climate change

The Arctic is warming at approximately twice the rate of the rest of the world. With this warming, dramatic changes will undoubtedly impact the region's landscape and natural values. As we have discussed with you before, large, intact tracts are believed to offer the greatest level of adaptation and resiliency to change.[17]

We encourage BLM to take proactive steps to plan for the impacts of climate change in the NPR-A. To do this, durable protections should be applied to durable avoidance areas of current high conservation value and areas of potentially future high conservation importance. Any protections should also take into account future changes that are likely to occur as a result of climate change, to ensure that protections remain meaningful over time. As mentioned above, The Wilderness Society's conservation prioritization efforts will help to inform where these avoidance areas should be located.

F. Achieving avoidance

There is currently no durable avoidance in the NPR-A. GMT-1 has already compromised "avoidance" setbacks that were designated in the IAP for Fish Creek and the Ublutuoch River. Moving forward, BLM should identify core areas of conservation and subsistence importance that should be avoided, such as the Teshekpuk Lake and Colville River Special Areas, and use its existing authorities to ensure that durable avoidance is achieved within the NPR-A. As mentioned above, the management of the NPR-A has not achieved real balance and at this time appears to favor development over conservation. To recalibrate its management approach, BLM should establish a series of avoidance areas within the RMS and then make these areas durably protected through the next National Environmental Policy Act (NEPA) review process and ROD within the NPR-A.

BLM has considerable authority to provide durable avoidance for areas of high conservation and subsistence value. These authorities exist, among others, under the Federal Land Policy and Management Act, the National Petroleum Reserve Production Act, and the Wyden Amendment.[18] These laws allow the use of rights-of-way,

[17] See: Mawdsley, J.R., R. O'Malley, and D.S. Ojima. 2009. A review of climate-change adaptation strategies for wildlife management and biodiversity conservation. *Conservation Biology* 23: 1080-1089.
[18] The Wyden Amendment, 16 U.S.C. 1011, provides: "For fiscal year 1997 and each fiscal year thereafter appropriations made for the Bureau of Land Management … may be used by the Secretary of the Interior for the purpose of entering into cooperative agreements with the heads of other Federal agencies, Tribal,

easements, leases, and agreements to ensure that durable avoidance is achieved to protect important natural values and systems. (See Appendix B for recent durability agreements between the State of California and BLM.)

While in the latter portion of this letter we will discuss minimization, compensatory mitigation, and mitigation tools in greater detail, it is important to again emphasize that avoidance must be achieved first. Minimization and compensatory mitigation are complementary to greater avoidance efforts. Without avoidance, however, certainty and reduced conflict for all stakeholders will not be achieved.

***Recommendations*:**

- Through the RMS, BLM must take steps to achieve durable avoidance. This includes identifying high value conservation and subsistence areas, such as the Teshekpuk Lake and Colville River Special Areas, that should be avoided, as well as describing the mechanisms for how avoidance will be achieved.
- To better balance conservation and development, avoidance areas should be identified within the RMS and then durably operationalized through the next National Environmental Policy Act (NEPA) review and ROD within the NPR-A, likely the Greater Mooses Tooth Two (GMT-2) development project.

2. Minimization

Following avoidance, minimization is the next tier in the mitigation hierarchy. While "avoidance" can be a form of reducing the impact that development has on the landscape, the specific goals of minimization are to decrease the effects that land use changes have on natural systems. Minimization can be achieved at both the project and landscape levels.

A. Project level minimization for future development

Project level minimization takes place through Lease Stipulations, Best Management Practices (BMPs), encouraging utilization of best technologies, and Interior's and other agencies' permitting processes. Note that strict adherence to and monitoring and enforcement of stipulations, BMPs, and permits are essential to effectively implement federal minimization policies.

For future developments covered by the RMS, additional project level minimization requirements should be part of the RMS that were not part of the GMT-1 approval. These minimization measures – which all are feasible and currently-used practices elsewhere – include:

State, and local governments, private and nonprofit entities, and landowners for the protection, restoration, and enhancement of fish and wildlife habitat and other resources on public or private land and the reduction of risk from natural disaster where public safety is threatened that benefit these resources on public lands within the watershed."

- Development of a Health Impact Assessment (HIA) for each new project. This HIA would examine how direct impacts to the region's ecosystem and subsistence resources would affect community structure and the public's health, and would propose alternatives that best mitigate impacts to subsistence, community structure, and health and wellness.
- Utilizing high-accuracy pipeline leak detection measures in sensitive areas such as high consequence watersheds.
- Utilizing automatic shut-off, rather than manual shut-off, pipeline valves to protect high consequence watersheds. As discussed in the GMT-1 FSEIS, changing to automated from manual valves at the Ublutuoch River likely would reduce releases into the river from 15,234 barrels (639,828 gallons) to 626 barrels (26,292 gallons) of fluids (oil, water, gas).[11]
- Explicitly prohibiting roads along transmission pipelines to new projects. The impacts of such roads include: adverse effects on wildlife and fish; private and commercial vehicle traffic which increases hunting access and pressure on caribou, waterfowl and other species, and; habitat loss and degradation under and adjacent to roads.
- Separating oil, gas, and water at each well-pad. This type of separation occurs at many offshore platforms, so it's clearly achievable onshore as well, albeit at a potentially higher cost than a more centralized separation facility. Separation allows better leak detection for and less corrosion of pipelines, and improved oil recovery through natural gas injection.
- Minimizing aircraft flights through alternatives such as ground transport along rights-of-way for relatively short distances, setting up field camps, utilizing boats, etc.

B. Landscape level minimization for future development

Certain development activities have broad, adverse effects on a landscape through cumulative impacts, through their areal extent (e.g., roads and pipelines), and by affecting connected landscape elements (e.g., wildlife migratory corridors on land and water). The RMS should ensure that future NEPA analyses address these landscape level effects, and the need for conservation planning.

C. Conservation Planning

The NPR-A's IAP involves some significant complexities regarding how conservation and subsistence values will be protected while allowing development activities on or near lands that have varying levels of restricted activities. To effectively achieve true minimization, BLM needs to establish standards and criteria for how lands will be managed for the NPR-A's only avoidance area (directly around Teshekpuk Lake), on Special Area lands that are closed to leasing but open for some level of permanent infrastructure like roads and pipelines, on Special Area lands that are open to leasing, and on lands outside of Special Areas that are open to leasing but still have important conservation value. Without standards and management objectives, there is considerable uncertainty for how resources will be conserved and how industry is expected to operate.

To ensure the conservation and protection of special resource values in the NPR-A and minimize the impacts of development, BLM should develop conservation plans for the region, and particularly for the Teshekpuk Lake and Colville River Special Areas. These formal conservation plans would complement the IAP to better refine land stewardship goals in order to maintain ecological and subsistence values, and to minimize the potential effects of development. Among other features, these plans would address wildlife populations and habitat protections, ecosystem connectivity, and climate resilience. Conservation plans would also establish standards for how and where exploration and development activities are permitted to impact the region. For example, how much infrastructure (like pipelines or roads) is allowed in particular areas.

Oil exploration in Smith Bay exemplifies the need for why formal conservation planning is needed. Our organizations have requested numerous times over the past several years that BLM develop management prescriptions for the NPR-A's Special Areas. Now with exploration activities being enabled by lands and waters of the Teshekpuk Lake Special Area, BLM is not effectively avoiding or minimizing impacts from development within and around this area of ecological and subsistence importance. For example, snow roads are being constructed through the Teshekpuk Caribou Herd's wintering grounds during a time of extremely harsh conditions, resource scarcity, and gestation. Conservation management plans would have helped ensure better and more responsible management by minimizing these snow road's impacts on the herd.

To complement these Special Area conservation management plans, we encourage BLM to sign a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service and the U.S. Geological Survey. Both of these federal agencies have high levels of expertise to assist in monitoring, studying, and managing important conservation and subsistence values. Moreover, while we discuss this in the latter portions of this letter, conservation area plans with an associated MOU would not only minimize the effects of development on the landscape, but it would inform how future avoidance and compensatory mitigation actions should be directed and appropriately prioritized.

D. Cumulative impacts

The RMS needs to ensure minimization of the cumulative impacts of multiple and/or expanded developments. The cumulative impacts of developments on the landscape may degrade ecological functions and subsistence more than what would be revealed in a project level analysis. For example, developments by different operators may not utilize common roads or pipelines, thus resulting in unnecessarily expansive footprints on the landscape. As another example, surrounding key wildlife habitat or a village with multiple or expanded developments can greatly reduce the viability of the wildlife population or village subsistence opportunities.

Development also can result in wildlife displacement. At some point, continued additions and/or expansions of development may fragment the landscape and reduce remaining habitat quality such that there is insufficient habitat to accommodate displaced wildlife.

In that case, new development may need to be avoided or minimized/modified to prevent these serious, adverse effects.

E. Areal extent

Roads, including temporary ice and snow roads, and pipelines extend many miles through a landscape and can result in a number of problematic impacts. These include construction and vehicle impacts on wildlife including noise, air pollution, spills, cleanups (if needed); disruptions/barriers to wildlife or subsistence-related movement; and the loss of wilderness qualities. It is important to recognize that these adverse effects often extend beyond the immediate "footprint" of the pipelines or roads, increasing the affected area across the landscape. Multiple roads and pipelines from single or multiple projects further increase adverse impacts. For these reasons, minimizing the impact of projects should include the elimination of roads where feasible, or minimizing the mileage of, temporary or permanent roads.

We recommend that BLM utilize a full Environmental Impact Statement process for all projects affecting the NPR-A, including state offshore drilling projects with onshore components, so that road and pipeline projects receive a full review of alternative designs and operating standards, along with public input.[19]

F. Roads

BLM should consider developing parameters, a rationale or framework that would limit the number or distance of roads connecting developments, so as to avoid allowing a road network that one day may cross the entire NPR-A from east to west and/or north to south. Roads that are connected across the NPR-A would convert the unique habitat of the NPR-A by increasing human access and expanding human activities in the NPR-A, including, likely, commercial activities. Human use of any roads in the NPR-A will likely last long after oil and gas companies have come and gone, and most all of the road impacts will continue as long as the roads are passable. [20]

G. Connected landscape elements

Migratory wildlife in the Arctic, including caribou and fish such as broad whitefish (which travels between lake systems during breakup), require intact, connected landscape elements to thrive. If key landscape elements are degraded through industrial development there can be serious wildlife impacts. This can be true even if the degradation occurs at just a single point in a connected system or if it includes actions typically considered less invasive, like water withdrawals. The RMS will be used to inform future NEPA analyses and needs to ensure that connected landscape elements are

[19] Note that the Caelus right-of-way for offshore drilling on state leases only had an Environmental Assessment and not an Environmental Impact Statement by BLM, even though the proposed action includes two snow road projects and extensive onshore infrastructure (see https://eplanning.blm.gov/epl-frontoffice/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=52907)
[20] See Appendix B: "Ecological Impacts of Roads."

protected in their entirety. Such protection may require development avoidance or minimization/modification to prevent adverse impacts.

***Recommendations*:**

- In order to ensure conservation and protection of subsistence and ecological resources, BLM should complete formal management prescriptions for the Teshekpuk Lake and Colville River Special Areas, and sign an MOU with the U.S. Fish and Wildlife Service and the U.S. Geological Survey.
- The RMS should ensure that future NEPA analyses address landscape level effects, i.e., cumulative impacts, areal extent, and connected landscape elements.
- BLM should utilize a full Environmental Impact Statement process for all projects affecting the NPR-A, including state offshore drilling projects with onshore components, so that road and pipeline projects receive a full review of alternative designs and operating standards, along with public input.
- Restrict the development of roads within the NPR-A so that a network of roads is not developed that reaches from one side of the NPR-A to the other – east to west, or north to south.
- Connected landscape elements must be protected in their entirety, which may require development avoidance or minimization/modification to prevent adverse impacts.

3. Compensatory Mitigation

In the following section we discuss the importance of compensatory mitigation as part of achieving the mitigation hierarchy. Here, we discuss the goals of compensatory actions and how these objectives can be achieved. Compensatory mitigation actions can and should be used to protect conservation and subsistence areas on the landscape. While it is important that core conservation and subsistence areas are first protected through thoughtful and lasting avoidance, and secondarily, minimization, compensatory mitigation actions must also be used to ensure that high conservation value areas and ecosystem processes are maintained with increasing development activities.

A. Goals of compensatory mitigation

Despite efforts to avoid and minimize the impacts of energy development in the NPR-A, there will always be unavoidable impacts that affect the values of the region. Oil development in the near-pristine Arctic has unavoidable impacts to conservation and subsistence values. Development, for example, is already disrupting the globally significant aquatic environment of the region and impacting the movement and health of the Teshekpuk Caribou Herd. These impacts are far greater than the "footprint" of the development project and warrant compensatory actions that extend beyond the impacts accounted for through established wetland compensatory mitigation actions (e.g. 2008 Wetlands Mitigation Rule).

Goals of compensatory mitigation in the NPR-A should focus on the protection of high value conservation and subsistence areas that were not safeguarded by avoidance or

minimization. Compensatory mitigation actions should also be used to maintain ecosystem functions, such as aquatic systems, and landscape-level processes like caribou migrations.

B. Protection before impacts

The recent Presidential Memorandum and Departmental Manual emphasize the importance of conserving high value areas before they are impacted by development. These directives instruct agencies to take proactive compensatory mitigation measures before impacts occur so that natural values and processes are secured and at a reduced risk of being compromised by future development impacts. The recent Presidential Memorandum specifically speaks to the need for "upfront" protections. The memorandum specifically reads: "Advance compensation means a form of compensatory mitigation for which measurable environmental benefits (defined by performance standards) are achieved before a given project's harmful impacts to natural resources occur."[21] The Department of the Interior Departmental Manual also emphasizes this point and reads: "When compensatory mitigation is necessary, the Department notes a preference for compensatory mitigation measures that: (a) maximize the benefit to impacted resources and their values, services, and functions; and (b) are implemented and earn credits in advance of project impacts."[22]

To achieve protection before impacts, we encourage the BLM to establish a set of compensatory mitigation "pools." These pools would be tracts of land established in advance of developments' impacts so that conservation and subsistence values are ensured while development is allowed to proceed in other areas. Over time, compensatory actions could "fill in" these pools with durable mitigation actions. An example of a "pool" may be an important area that is used for caribou migration between features of the landscape or an important nesting or molting area for birds like Pacific Black Brant and Greater White-Fronted Geese. Special Areas may also be viable pools.

To maintain the viability of these "pools" to effectively offset future impacts from development in the region, these areas must be stewarded for their conservation values. To achieve this level of stewardship, and as discussed above, we encourage BLM to utilize compensatory mitigation funds to complete detailed conservation management plans. These plans would establish management prescriptions and goals to ensure the protection of conservation and subsistence resources. Without active management the value of these pools could be lost and the goals of protecting important lands as a form of compensatory mitigation would not be achieved.

To ensure sound stewardship of these proactively protected areas, the memorandum of understanding (MOU), discussed above, between BLM and the U.S Fish and Wildlife Service and the U.S Geological Survey would also be constructive in this context. These

[21] Available at: https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related

[22] See: Department of the Interior Departmental Manual, Chapter 6: Implementing Mitigation at the Landscape-scale, Office of Policy Analysis, 23 October 2015.

two federal agencies have extensive experience in the Arctic managing migratory species, like birds, and have excellent scientific capacity to study and monitor population health, and to assist in management.

C. Proportional conservation protections

BLM's mitigation guidance requires that mitigation result in a minimum of no net loss of resources and values, with a net gain goal as required or appropriate. Measuring the total direct, indirect and cumulative impacts from oil and gas development in a landscape like the NPR-A is challenging, given that many of the natural and subsistence resources are part of a huge and delicately interconnected system that spans millions of acres and a variety of habitats and ecosystems. Caribou migration corridors cross thousands of miles; river, wetland and groundwater systems connect throughout the region; and migration and breeding habitat for a multitude of bird species are only a few examples of the large and interconnected nature of this landscape.

Because of the nature of this landscape, direct impacts and indirect impacts to a relatively small number of acres can result in ripple effects throughout the system, especially when the impacts are in sensitive areas such as the Fish Creek setback. The nature of this system requires that the area encompassed by the RMS compensatory mitigation be much greater than the area of direct, indirect and cumulative impacts.

The nature and success rate of compensatory mitigation measures also requires that the compensatory mitigation encompass an area much larger than the area of impacts. For preservation and acquisition to meet additionality requirements, calculations must be made that consider the "background rate of loss" in the region to understand the amount of benefits provided by these tools per acre. In an area like the NPR-A with extremely low background rates of loss, very large areas must be preserved or acquired to ensure additionality. Restoration must also be proportional given potential failure of restoration actions and time needed to achieve conservation benefits from restoration.

Finally, compensatory mitigation must result in conservation gains that can be managed to maintain ecosystem and resource functionality. For many resources in the NPR-A, functionality requires large areas to be encompassed. BLM has described this type of requirement in other areas, including with regards to compensatory mitigation for impacts to Lands with Wilderness Characteristics in its Solar Programmatic Environmental Impact Statement (PEIS), which describes the following tool as one method for compensatory mitigation:

> Enacting management to protect lands with wilderness characteristics in the same field office or region that are not currently being managed to protect wilderness character. Areas that are to be managed to protect wilderness characteristics under this approach must be of sufficient size to be manageable, which could also include areas adjacent to current WSAs or adjacent to areas currently being managed to protect wilderness characteristics. Solar PEIS ROD at 54-56, emphasis added.

Though we have not developed a specific recommended formula or ratio for the proportionality of conservation from compensatory mitigation for the RMS, the factors described above clearly indicate the need for compensatory mitigation to encompass an area of several factors of magnitude greater than the area of direct, indirect and cumulative impacts from development.

One example of how BLM has effectively mitigated for loss of resources and values on public lands from development can be found in the McCoy Solar project in California. As part of mitigation, BLM can commit to managing land for conservation purposes, identifying specific values that will be preserved, heightened and restored within a specific area to compensate for impacts in another area. Management can occur through designating new areas, such as Special Areas in the NPR-A or areas of critical environmental concern in other BLM units, enhancing management through specific management prescriptions or committing to specific projects within such areas. For McCoy Solar, BLM's environmental analysis found that development of Phase 2 of this solar project would result in the loss of 1,000 acres of BLM-inventoried lands with wilderness characteristics. To mitigate these impacts, before disturbing any lands with wilderness characteristics, the developer is required to make a payment of $250,000 to BLM to fund work to remove and restore approximately 15 miles of unauthorized vehicle routes; convert approximately three miles of vehicle route into a hiking trail; and install vehicle barriers and signing along publicly accessible portions of the wilderness boundaries. These actions will occur in the nearby Big Maria Mountains and Palen-McCoy Wilderness Areas or other designated wilderness areas near the project.

D. Mitigation fees

Compensatory mitigation fees are another crucial component of a successful RMS. With land use changes and development disturbances, fees are necessary to fund the mitigation actions that will ensure the protection of natural areas and processes. Fees need to be high enough to allow for effective stewardship, which includes land and resource protections, sound monitoring, and mechanisms to ensure effective adaptive management. Working in the Arctic is expensive and these endeavors will likely be costly. If fees are inadequate to meet effective management standards, the goals of mitigation will not be achieved and development will continue to disproportionately impact subsistence and conservation values.

Compensatory mitigation fees are an important component of the RMS. Fees add needed certainty for development interests because they provide a known cost of doing business. Among other features, fees should have the following features:

- Be defensible to industry, elected officials, and the public at large
- Be easily replicated so that principles are consistently and fairly applied to all future developments
- Be reducible in order to incentivize development in lower conservation and subsistence value areas

- Be based on specific actions that will ensure that conservation values are protected
- Be high enough for BLM to effectively achieve its mandate to protect conservation and subsistence areas and values

E. Mitigation tools and durability

In previous letters, we have described a series of mitigation actions that we believe BLM should utilize to achieve effective stewardship of the NPR-A. These tools include the use of conservation easements and rights-of-way. With regards to ensuring that mitigation is durable, a recent Memorandum of Understanding (MOU) between the BLM and the California Department of Fish and Wildlife provides additional details on tools that BLM can use to increase the durability of mitigation on public lands.[23] The MOU endorses the use of various "land use authorizations" to achieve mitigation, including "rights-of-way pursuant to 43 U.S.C. § 1761, et seq.; permits, leases or easements pursuant to 43 U.S.C. § 1731, et seq., and 43 C.F.R. § 2920; leases pursuant to the Recreation and Public Purposes Act (RPPA), 43 U.S.C. § 869, et seq.; and terms and conditions on such land use authorizations that are necessary to meet state permitting or compensatory mitigation requirements."[24] This is in addition to BLM's broad authority under the Naval Petroleum Reserves Production Act to "grant such rights-of-way, licenses, and permits as may be necessary to carry out [its] responsibilities" in the Reserve.[25]

BLM already provides rights-of-way, easements and RPPA leases for extended terms, including issuing these instruments "in perpetuity." Consequently, using these tools allows for the mitigation actions authorized through the RMS to be of sufficient length and certainty – "durability" – to provide assurance that mitigation can be tailored to the duration of impacts and restoration for oil and gas activities authorized under the NPR-A IAP.

The MOU between the State of California and BLM endorses BLM's authority to use these traditional land authorizations to ensure durable mitigation that provides additive conservation. In addition, the MOU describes the types of "Compensatory Mitigation Actions" that can be achieved using these tools, including actions such as fencing, restoration and developing habitat or water sources, but also management actions like increasing law enforcement patrols or increasing educational outreach.[26] Implementing strengthened management prescriptions for Special Areas in the NPR-A could be achieved using these authorizations, as could the other types of activities contemplated in the MOU. BLM should use these tools to add durability to mitigation measures that will be implemented through the NPR-A's RMS.

[23] See: http://www.drecp.org/documents/docs/2015_Durability_Agreement_BLM_CAFW.pdf and the documents attached to these comments in Appendix B.
[24] MOU, Section C.4.b, p. 3.
[25] 42 U.S.C. §6502
[26] MOU, Section C.4.a, p. 3.

F. Locations for compensatory mitigation action

As discussed above, The Wilderness Society is currently working to better understand the NPR-A's conservation and subsistence values in a warmer and uncertain future. Like with identifying important areas for avoidance, this geographical analysis will also inform areas where compensatory mitigation can potentially take place. While lasting protections of the NPR-A's Special Areas is our highest priority, we will be providing BLM more detailed maps in the coming weeks about where additional compensatory actions should take place.

G. BLM should solely use the phrase "unavoidable impacts"

The goal of compensatory mitigation is to offset impacts that remain despite efforts to reduce developments' effects on ecological and subsistence values. However, BLM staff often uses the phrase "residual impacts" to describe the goal and purpose of compensatory actions. We believe that the use of this term is confusing and inaccurate. For the purposes of clarity, we encourage the BLM to only use the term "unavoidable."

The term "residual" does not effectively capture the intent and meaning behind why compensatory actions are needed. The word "residual" can imply that while impacts may remain, in theory, they can be managed and dealt with in order to have no impact. In reality, compensatory mitigation actions offset impacts that are truly unavoidable and that will remain. "Residual" removes the significance that development will have negative impacts on the landscape forever.

H. Mitigating unavoidable impacts from GMT-1 to subsistence

As stated above, subsistence is dependent on a healthy and functioning ecosystem to provide abundant levels of wild resources. BLM has identified impacts to subsistence as the focus of mitigation for the GMT-1 development, and BLM appears to be focused on the "social" impacts to subsistence. However, subsistence resources and practices are directly connected to the landscape and its natural resources. BLM need only turn to the Alaska National Interest Lands Conservation Act (ANILCA) to recognize this relationship in a legal and policy context. ANILCA addresses the relationship between subsistence activities and natural resources, and the need to protect and maintain access to those resources in order to provide assurance to subsistence users. While there is no question that subsistence activities and a subsistence way of life have deeply rooted social components and aspects, without the natural resource component, subsistence would not thrive.

The direct impacts of GMT-1 are to the physical environment. GMT-1 development includes a road, pipeline, vehicle traffic and other activities that will compromise a sensitive subsistence use area and result in unavoidable impacts to the physical and social environment. One of the impacts from placing infrastructure in important subsistence use areas is displacement, which makes it all the more important to ensure that remaining subsistence use areas are protected. To mitigate for the harm to local people caused by

impacting an important subsistence use area and to protect the remaining subsistence use areas, BLM should consider establishing with the input of residents of Nuiqsut another subsistence use area that is off-limits to oil and gas leasing, exploration, development and infrastructure. The restrictions to the new subsistence area should be permanent or for the life of the impacts of the development. These protections could potentially be achieved through the use of tools such as conservation easements and rights-of-way that durably protect key subsistence access routes and use areas. This is an example of an additive conservation measure, aimed at mitigating the harm locals will experience from compromising the Fish Creek setback area that would ensure future opportunities for subsistence activities. We urge BLM to include examples similar to this in the RMS as part of the suite of mitigation measures that could be pursued in the future.

***Recommendations*:**

- BLM should identify and protect pools of land where future compensatory actions can take place. These lands would have detailed conservation management plans, also paid for through compensatory funds, to ensure their viability as effective offsets for the impacts of development-related activities.
- To address the large, interconnected nature of the resources and values in the NPR-A, the nature of the mitigation tools available, and the need for compensatory mitigation areas to be manageable in the context of ecosystem and resource functionality, the compensatory mitigation must encompass an area of several factors of magnitude greater than the area of direct, indirect and cumulative impacts from development.
- To offset the unavoidable impacts from GMT-1 to subsistence, BLM needs to durably protect the systems and places that make subsistence possible.

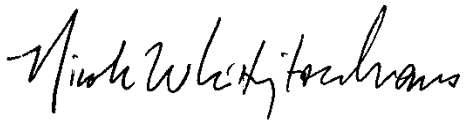
IV. Conclusion

The BLM has a statutory obligation to protect the unique ecological and subsistence values of the NPR-A. To do this will require intensive and thoughtful stewardship largely guided by the RMS. Balancing energy development and natural resource protection is a challenging endeavor but can be accomplished. Central to this success, however, is an understanding that real conservation protections are needed and that it will require a greater land area devoted to conservation than to development in order to maintain ecosystem functions and processes in the warming Arctic.

As we move forward with the NPR-A's Regional Mitigation Strategy, we encourage BLM to follow the plethora of departmental and agency guidance, and to utilize its existing authorities to fulfill the goals and objectives of the *entire* mitigation hierarchy.

We appreciate you taking the time to consider these comments. And again, thank you for your hard work on this important effort.

Sincerely,



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Appendix A:

Efforts by The Wilderness Society to prioritize conservation values to inform landscape-scale mitigation planning in Alaska's changing Arctic

Prioritizing conservation values to inform landscape-scale mitigation planning in Alaska's changing Arctic

Knowing where values and vulnerabilities occur across landscapes and regions should be a first step in developing conservation strategies (Dickson et al. 2014). Effective conservation planning depends on assessing and mapping the values that we hope to sustain through natural resource management and long term protection. Spatial data depicting various environmental, climatic, vegetation, subsistence, and land use characteristics are increasingly available to the public, which allows scientists, resource managers, and other stakeholders to overlay data and investigate multiple values simultaneously (e.g., Aplet et al. 2000, Leu et al. 2008, Theobald 2010).

The discipline of conservation biology emphasizes the development of networks of protected areas and strategies focused on large landscapes spanning a range of human land use and ecological conditions (Lindenmayer et al. 2008). A singular focus on designating core protected lands has given way to linking networks of protected areas while creating strategies that sustain conservation values in rapidly developing areas. A holistic conservation vision emerging from such strategies is vital to maintaining diverse land values in a time of rapid human change. Complicating this vision are the uncertain but imminent impacts of climate change that may alter current values and strategies.

Recognizing these challenges and opportunities, The Wilderness Society is engaging in efforts to overlay conservation and subsistence values and to prioritize them in light of climate change and attendant uncertainty. The Regional Mitigation Strategy (RMS) being developed by the Bureau of Land Management (BLM) for the National Petroleum Reserve – Alaska (NPR-A) includes identifying key areas where mitigation efforts will be focused to balance development impacts.

The first step in conducting a prioritization assessment is to identify key conservation values. For the Alaskan Arctic, these include:

Wildness
Wildness indicates how well an area reflects a pristine ecosystem free of intentional human effects (Aplet et al. 2000). It includes ecosystem integrity as well as the ability to offer solitude and remote experiences. Areas with high wildness represent natural ecosystems with an absence of direct human control over ecological processes and are The Wilderness Society's highest conservation priority.

Ecosystem representation
Protected areas can best meet conservation goals if they represent all ecosystems (Dietz et al. 2015). This approach assumes that protected areas more fully conserve genetic, species, and community diversity when they encompass the full variety of ecosystem types across their geographic range (Olson and Dinerstein 1998; Margules and Pressey 2000). Representation indicates how well various ecosystem types are included in existing protected areas and emphasizes where underrepresented ecosystems occur that may be prioritized for future protection (Dietz et al. 2015).

Wildlife biodiversity
Conserving wild ecosystems of the future requires ensuring that the species that exist today are sustained as the building blocks of future ecosystems. By protecting "hotspots" of species diversity, we protect genes, species and communities at multiple scales, helping preserve functioning ecosystems that are more resilient to disturbance (Harris et al. 1996; Poff et al. 1997) and that reduce the risk of large extinctions (Schindler et al. 2010).

Connectivity
Connected landscapes support ecological and evolutionary processes that require large areas, such as movement, gene flow and range shifts (Beier et al. 2011). The importance of connectivity is well recognized (Taylor et al. 1993; Cushman et al. 2013), as movement of individuals is essential both for short-term persistence of populations (Fahrig 2003; Cushman 2006) and for longer-term shifts in species range in response to climate change (Heller and Zavaleta 2009). In the Arctic, connectivity is particularly important because resources are sparse, requiring many species to migrate long distances to maximize growth, reproduction and survival.

Subsistence use areas
Areas heavily used for subsistence hunting, fishing, and gathering provide important cultural human values. They represent the intersection of important wildlife habitat and human use near local communities. Subsistence activities have occurred in the Arctic for thousands of years and depend on an intact environment, aligning well with conservation priorities.

Assessing climate resilience

The values above can be combined to identify areas of high conservation value. These values can then be brought together with an assessment of climate vulnerability/resilience to identify areas of high conservation priority (Fig. 1). Variability in climate regimes associated with topographic complexity and geological parent material may allow species and ecosystems greater opportunities to find suitable habitat and climate niches compared to less topographically complex landscapes. Prioritizing such resilient areas for protection increases the likelihood of achieving sustainable conservation over the long term (Mawdsley et al. 2009).

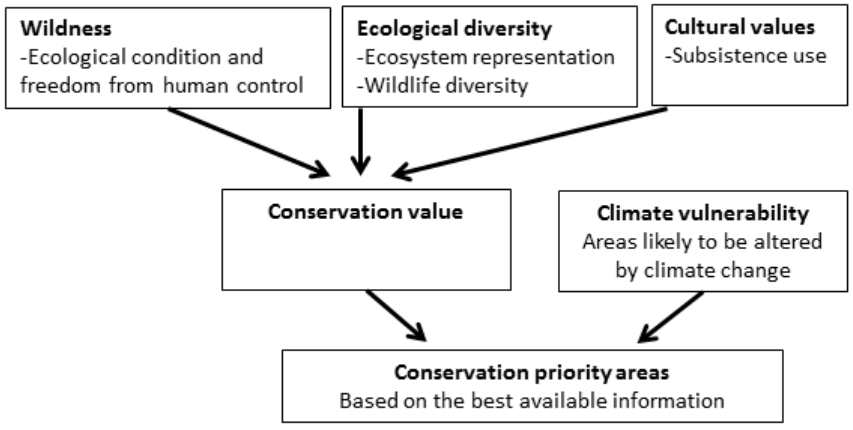

Figure 1: Flow diagram showing the process used to identify conservation priority areas in the Arctic. The areas identified occupy the lower right hand corner of Figure 2.

Conservation portfolio approach

The Wilderness Society is developing a framework to use the relationship between conservation values and climate change to inform management decisions nationwide by placing them on separate axes (Fig. 2). Where conservation value is high and climate change is low, places with high ecological integrity and subsistence value may be sustained in the future with a protection strategy akin to wilderness. Where conservation value is low and climate change will be slow, the historical climate may persist and historical ecosystem composition, structure, and function may be improved through ecological restoration. Where conservation value is low but climate change is anticipated to be great, there may be opportunities to experiment with new conditions that sustain important ecological building blocks, even if the ecologies of these places are novel with respect to the past. Where conservation values are high and climate change will be rapid (or where we simply do not know the direction of future climate), it is much less clear which option will lead to the best outcome. There, it makes most sense to take a "portfolio approach" to conservation, where risk is spread among all three management responses to climate change in wildland systems: accepting change, engaging in restoration to resist change, or trying to anticipate where the climate is going and manage ecosystems into a more resilient condition.

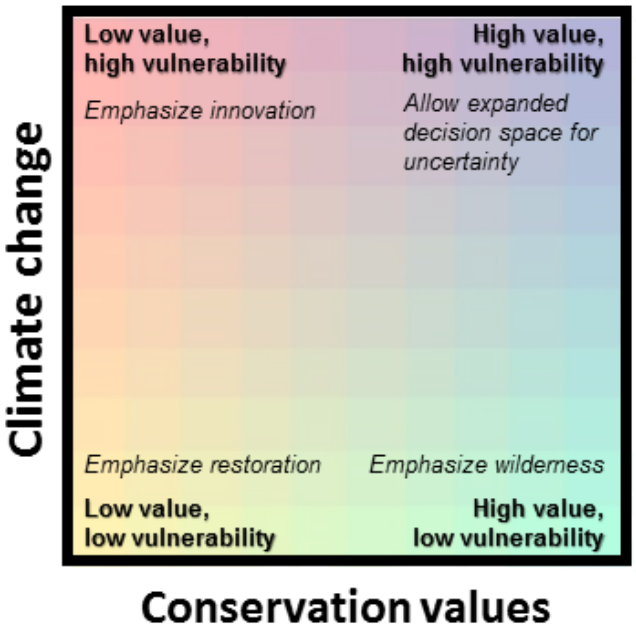

Figure 2: Suggested management prescriptions for areas with varying degrees of climate change resilience and wildland values

In the NPR-A, portfolio approach thinking can suggest different actions from the mitigation hierarchy in different locations based on the compilation of their conservation value and likelihood of change. Areas in the lower right hand corner of Fig. 2 may be of prime importance for avoidance or for more durable forms of compensatory mitigation, such as conservation easements. Areas falling on the left half of Fig. 2 may be more suitable for development, but also offer exciting opportunities for compensatory restoration and/or innovation as well as the potential for maintaining important connectivity for mobile species. As is suggested by the national framework above, the upper right corner of Fig. 2 is the most challenging and the precautionary principle suggests spreading out risk across various management actions and ensuring monitoring to enable adaptive management as future changes are revealed.

In summary, compiling spatial data on conservation values offers BLM a tool to defensibly prioritize future mitigation areas with respect to conservation values and climate change. The Wilderness Society is currently engaging in a spatial prioritization analysis and is happy to share the results with BLM and other interested parties upon completion.

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Appendix B:

Ecological Impacts of Roads

Fact Sheet: National Petroleum Reserve - Alaska

Ecological Impacts of Roads

Roads have a profound effect on wildlife. Every year millions of mammals, birds, and amphibians are killed by vehicles traveling on America's roads. The indirect impacts of roads on wildlife and their habitats can be just as damaging. For example, roads affect wildlife behavior and movement, contribute to air, water, and noise pollution, and can permanently alter habitats and entire ecosystems.

The following ecological effects of roads are well documented in scientific literature:

- Animal mortality from road construction
- Animal mortality from collisions with vehicles
- Modification of animal behavior, for example road avoidance and interference with nesting, breeding, foraging and migration
- Alteration of the physical environment, including direct loss of habitat, fragmentation of previously connected habitats, impacts to the environment from dust and degradation of aquatic habitats as a result of altered stream flows, runoff rates, sedimentation, and changes to temperature, soil content and soil density
- Alteration of the chemical environment, including introduction of nutrients, organic molecules, and pollutants such as oil, salt, heavy metals, ozone and exhaust from cars
- Introduction and spread of exotic species
- Increased human access and impacts, including illegal hunting and off-road vehicle use

Each of these examples should be considered among the potential cumulative—and likely irreversible—effects of permanent roads within the NPR-A. Species that rely on wetlands and streams (shorebirds, waterfowl and broad white fish), and species with large home ranges (polar and brown bears and caribou), are especially vulnerable to roads.

Roads fragment habitat

Roads are a significant cause of habitat fragmentation, and fragmentation can have many adverse effects. For example, by dividing and isolating populations, fragmentation can affect species genetics and increase the likelihood of population decline as species become more prone to disease and inbreeding.

Also, by creating new edge and core areas, habitat fragmentation can:

- change habitat composition
- create microclimate changes, including potential permafrost alterations
- alter flows of energy and nutrients
- result in changes to the type and quality of food available, and
- alter species compositions, disrupting natural distributions and whole system balances

Roads alter wetlands

The Teshekpuk Lake Special Area in the northeast NPR-A is part of the largest wetlands complex in the circumpolar Arctic and hosts some of the highest densities of nesting shorebirds throughout the global Arctic region. Roads can impound wetlands and change their hydrology and ecological function, even if culverts are used. For example, road and bridge construction activities can increase sediment loading to wetlands. Even after road construction, rainfall, ice-melt - including Alaska's spring "break-up" - and snowmelt carry sediments, organic matter, heavy metals, hydrocarbons, road salts, and debris into streams and wetlands. The

result is increased salinity, turbidity, and toxicity and decreased dissolved oxygen, impacts that affect aquatic life and ultimately the larger food web.

Road maintenance also contributes many chemicals to wetlands. Herbicides, soil stabilizers, and dust palliatives used along roadways can damage wetland plants and the chemicals may concentrate in aquatic life or cause mortality. Furthermore, bridge maintenance may contribute lead, rust (iron), and the chemicals from paint, solvents, abrasives and cleaners directly into wetlands.

Longer-term changes in wetland hydrology can result from increased rates of erosion and channelization, as well as alteration of species composition and increased accumulation of pollutants. These changes may adversely affect wetlands and riparian habitats, species, such as broad white-fish and salmon spawning and migration and, ultimately, alter ecosystems.

Specific concerns for the NPR-A

Bears—All three species of bears are found within the NPR-A. Polar bears, listed as Threatened under the Endangered Species Act, and brown bears are found within the Northeastern part of the NPR-A, including the Teshekpuk Lake and Colville River Special Areas. The coastal region of the NPR-A provides on-shore denning habitat for polar bears, and it was proposed by the USFWS as critical habitat, though litigation has clouded this designation. Polar and brown bears are dependent upon unfragmented habitat, food availability and low levels of human disturbance. Roads in the northeastern NPR-A would affect these factors as well as bear behavior, specifically through habitat fragmentation, impacts to travel corridors, and increasing human access. For brown bears, roads in the northeastern NPR-A may also impact species that are important food sources. Human-bear conflicts will likely increase with permanent road development, because roads could allow greater access to important bear habitat, including denning areas.

Caribou—Temporary snow or ice roads and permanent roads in the northeast region of the NPR-A have the potential to fragment important habitat for the Teshekpuk Lake Caribou Herd, including migratory corridors, winter, insect relief, and calving habitat. Studies in Canada and Alaska have indicated that roads can affect caribou in many ways. Impacts from roads within the NPR-A may be confounded for the unique Teshekpuk Herd, as, unlike other caribou herds, it mostly does not migrate outside of Alaska's western Arctic region. Because the Teshekpuk Caribou Herd remains in the western Arctic year-round, it is the most important herd for subsistence in Alaska's western Arctic communities.

Pacific Brant—An increasing number of Brant are nesting in Alaska's Arctic region and molting in coastal areas north of Teshekpuk Lake, in the Teshekpuk Lake Special Area. Brant are very sensitive to disturbance, especially while molting and flightless, and the increased activity a road would bring is likely to significantly affect this bird, as well as many other waterfowl and shorebirds that use this area. Brant are a very important subsistence resource.

Broad White Fish—Roads in the NPR-A likely would cross numerous streams and wetlands utilized by broad white fish and would likely destroy some of this habitat. A road would also increase sediment loads, and alter flows and water temperatures, which could affect broad white fish productivity and survival rates.

Bottom line: Roads result in significant impacts to most habitats, and particularly to sensitive, wetlands habitat.

For more information contact: *Nicole Whittington-Evans, Alaska Regional Director, The Wilderness Society Alaska Regional Office, 907-351-8844, nicolewe@tws.org.*

Appendix C:

Tools that BLM can use to increase the durability of mitigation on public lands

AGREEMENT BY AND BETWEEN
THE UNITED STATES BUREAU OF LAND MANAGEMENT AND
THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

A. STATEMENT OF PURPOSE

The Bureau of Land Management (BLM) and the California Department of Fish and Wildlife (CDFW) agree to work with each other to conserve biological and natural resources on federal public lands administered by the BLM within California. The BLM and CDFW have developed this agreement (Agreement) for the purpose of memorializing and making specific their cooperation and coordination to protect and conserve fish, wildlife, plants and their habitat within California. This Agreement supplements the MOU by and between the Bureau of Land Management and the California Department of Fish and Game, entered into by BLM and CDFW on November 27, 2012.

B. STATEMENT OF AUTHORITIES

The BLM and CDFW each have specific administrative responsibility or regulatory authority under Federal and state statutes. These statutes direct them, in part, to take into consideration biological and natural resources within the state, including certain species of concern and their habitats, and adverse effects resulting from federal, state, and private land use and development actions. These statutes include but are not limited to:

1. BLM. The Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. § 1701 et seq.); the Omnibus Public Lands Management Act of 2009 (OPLMA), Pub. L. 111-11, March 30, 2009; the Consolidated Appropriations Act of 2012, Pub. L. 112-74, December 23, 2011; the Endangered Species Act of 1973, Sec. 2 (c)(1) and Sec. 7(a)(1) and (2) (ESA); the Sikes Act of 1974, 16 U.S.C. § 670g-o; the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq. (NEPA); Recreation and Public Purposes Act, 43 U.S.C. § 869, et seq. (RPPA); and 43 C.F.R. Part 24, Department of the Interior Fish and Wildlife Policy: State-Federal Relationships.

2. CDFW. The California Endangered Species Act, Fish and Game Code § 2050, et seq. (CESA); the Natural Community Conservation Planning Act, Fish and Game Code § 2800, et seq. (NCCPA); Fish and Game Code § 1600, et seq. (Section 1600), the Native Plant Protection Act, Fish and Game Code § 1900, et seq. (NPPA); Fish and Game Code §§ 3511, 4700, 5050, and 5515; Fish and Game Code §§ 3503, 3503.5, and 3513; Fish and Game Regulations, Title 14, Cal. Code Regs.; Fish and Game Code § 1802; and the California Environmental Quality Act, Public Resources Code § 21000, et seq. (CEQA).

C. PROCEDURES AND RESPONSIBILITIES OF THE BLM AND CDFW

1. BLM Conservation Lands. The BLM manages federal public land within California. Some of this land is managed under some form of conservation protection, including: (i) legislatively and legally protected areas, such as Wilderness Areas, Wilderness Study Areas, and Wild and Scenic River designations; (ii) lands designated as part of the National Landscape Conservation System (NLCS); and (iii) lands administratively designated as Areas of Critical Environmental Concern (ACECs) and Wildlife Allocations. Some lands are subject to overlapping designations for wildlife and non-wildlife conservation goals. Collectively, lands with these designations are referred to herein as "BLM Conservation Lands."

2. CDFW Compensatory Mitigation Requirements. In administering CESA, the NCCPA, Section 1600, and CEQA, CDFW routinely imposes upon individual project permittees the requirement to provide compensatory mitigation for take of or impacts to fish, wildlife, plants, and their habitat. Typically, CDFW requires a permittee to provide for the permanent protection and management of habitat by either purchasing credits at a mitigation bank, purchasing a conservation easement on private land, or purchasing private land and protecting it with a conservation easement. Although compensatory mitigation is usually completed on private land, CDFW is committed to ensuring that permittees seeking to satisfy compensatory mitigation requirements identify and protect the highest quality habitat available, regardless of whether that occurs on private or public lands. In designing appropriate mitigation for any given project, CDFW also seeks to locate mitigation where it will best offset the specific types of adverse effects from the project, whether that is on public or private land.

3. Importance of BLM Conservation Lands to Conservation in California. Both the BLM and CDFW recognize that many BLM Conservation Lands include critically important habitat for CESA-listed species, fully protected species, and other species of special concern in California. BLM Conservation Lands often include areas essential for ecological connectivity between natural landscape blocks and between wildlife populations. BLM Conservation Lands can also serve to prevent habitat fragmentation and to contribute to the protection, enhancement, restoration, or expansion of natural landscape blocks to maintain functionality of habitats for the covered species and thus to contribute to the stability and long-term viability of wildlife populations.

4. Use of BLM Conservation Lands to Satisfy CDFW Compensatory Mitigation Requirements. Using BLM Conservation Lands to contribute toward satisfaction of compensatory mitigation requirements for projects permitted by CDFW benefits: (1) CDFW by facilitating its permitting process; (2) BLM by providing funding and staffing

for restoration and enhancement work on BLM Conservation Lands; and (3) both agencies by helping fulfill their mutual goal of protecting and conserving fish, wildlife, plants and their habitat within California.

a. Compensatory Mitigation Actions. Compensatory mitigation actions that may be undertaken on BLM Conservation Lands include, but are not limited to:

   i. Fencing highways, freeways, and primary county roads;
   ii. Removing, restoring, or rehabilitating closed roads;
   iii. Removing illegal dumps;
   iv. Removing or controlling invasive or exotic plant infestations;
   v. Predator control actions;
   vi. Improving habitat connectivity by increasing the size of existing culverts, increasing the number of culverts, or constructing alternative means of crossings;
   vii. Additional law enforcement patrols;
   viii. Restoration of habitat and corridors;
   ix. Acceptance of the relinquishment of grazing permits or leases to make the land available for mitigation by allocating the forage permanently to wildlife use pursuant to the Consolidated Appropriations Act of 2012;
   x. Creating artificial nests or burrow sites;
   xi. Fencing between grazing lands and wildlife habitat lands;
   xii. Developing water sources for wildlife; and
   xiii. Increasing education outreach (e.g., interpreters, handouts, kiosks, signs).

b. Land Use Authorizations for Compensatory Mitigation. The following land use authorizations are available and may be approved and granted by the BLM to authorize CDFW-required compensatory mitigation actions on BLM Conservation Lands:

   i. Rights-of-way pursuant to 43 U.S.C. § 1761, et seq.;
   ii. Permits, leases, or easements pursuant to 43 U.S.C. § 1731, et seq., and 43 C.F.R. § 2920;
   iii. Leases pursuant to the Recreation and Public Purposes Act, 43 U.S.C. § 869, et seq. (RPPA); and
   iv. Terms and conditions on such land use authorizations that are necessary to meet state permitting or compensatory mitigation requirements;

   The BLM may also recommend that the Secretary of the Interior exercise authority under 43 U.S.C. § 1714 to make withdrawals.

c. Cooperative Agreements between the BLM and CDFW. In addition to the land use authorizations discussed above, the BLM and CDFW may enter into one of the following types of cooperative agreements to protect BLM Conservation Lands used to satisfy CDFW compensatory mitigation requirements:
    i. Site-specific cooperative agreements for management pursuant to 43 U.S.C. § 1737(b); or
    ii. Site-specific Sikes Act Agreements pursuant to the Sikes Act of 1974, 16 U.S.C. § 670g-o.

5. Coordination between BLM and CDFW With Respect to State-Recognized Compensatory Mitigation on BLM Conservation Lands.

a. Notice. CDFW will inform the applicable BLM Field Office Manager in writing if it identifies BLM Conservation Lands that may be suitable to serve as compensatory mitigation for a project subject to CDFW permitting under CESA, the NCCPA, Section 1600, or CEQA. BLM will inform the applicable CDFW Regional Manager in writing if it identifies BLM Conservation Lands that may be suitable to serve as compensatory mitigation for CDFW permitting purposes.

b. Meet and Confer. Upon receipt of a written notice initiated by either agency pursuant to this section, the BLM and CDFW will meet within thirty (30) days to discuss whether the applicable BLM Conservation Lands possess the appropriate biological characteristics, land use designations, and other attributes to make the lands suitable to serve as compensatory mitigation for CDFW permitting purposes and for BLM land use management purposes.

c. CDFW Determination. Consistent with its authority and discretion under CESA, the NCCPA, Section 1600, and CEQA, CDFW will make the final determination as to whether protection of BLM Conservation Lands will satisfy compensatory mitigation requirements under permits or approvals issued by CDFW pursuant to these laws and accompanying regulations.

d. BLM Determination. Consistent with its authority and discretion under FLPMA, the BLM will make the final determination as to whether management actions or authorizations on BLM Conservation Lands to provide for compensatory mitigation consistent with CDFW compensatory mitigation requirements may be implemented consistent with the requirements of Federal law, regulations, and BLM land use management purposes.

e. BLM Conservation Lands Approved for CDFW Compensatory Mitigation. For the purposes of this Agreement, BLM Conservation Lands on which the BLM has decided to take management actions or authorized activities that contribute to satisfaction of CDFW compensatory mitigation requirements, and which CDFW accepts for a particular permit or authorization, shall be called "BLM Conservation Lands Approved for CDFW Compensatory Mitigation."

6. Consideration of Management Actions and Authorizations for BLM Conservation Lands to Contribute to CDFW Compensatory Mitigation Requirements. With respect to BLM Conservation Lands proposed to contribute to satisfaction of CDFW compensatory mitigation requirements, the BLM and CDFW further agree as follows:

   a. Once a land area is identified under Section C.5, BLM and CDFW will work together to identify and evaluate the specific management actions and authorizations, consistent with BLM's land management authority defined by Federal law, regulations, and policy, which address CDFW goals for Compensatory Mitigation and are sufficient to contribute to meeting CDFW permitting requirements. In considering the specific management actions and authorizations, the BLM will take into account the duration of the impacts that are proposed to be mitigated through protection of the BLM Conservation Lands and will seek to secure the mitigation benefits for the duration of the impacts to the extent consistent with Federal law, regulations, and policy. For purposes of this Agreement, the duration of the impacts includes the duration of the project permitted by CDFW, decommissioning, and the restoration of the site sufficient to restore the biological functions to a level sufficient to provide habitat functions for the species in the affected area.

   b. The BLM and CDFW shall consider the use of site-specific Sikes Act Agreements and Cooperative Agreements for Management for BLM Conservation Lands considered for compensatory mitigation purposes.

   c. In addition to, or as an alternative to, entering into any Sikes Act Agreement or a Cooperative Agreement for Management, CDFW, or a third party capable of meeting the required terms and conditions, may request the BLM to consider one or more of the land use authorizations listed in Section C.4.b. to secure protection of BLM Conservation Lands. If the BLM issues to CDFW a land use authorization for compensatory mitigation purposes pursuant to this Agreement, CDFW will ensure that its employees and agents comply with the terms and conditions of that authorization. If the BLM issues to a third party a land use authorization for compensatory mitigation purposes pursuant to this Agreement,

the BLM and CDFW will work together to develop processes to monitor compliance with the terms and conditions of that land use authorization. CDFW will notify the BLM of any proposed activity on BLM Conservation Lands Approved for Compensatory Mitigation that has the potential to impact BLM-managed resources, biological or otherwise, and to obtain the appropriate BLM-approval prior to commencing that activity.

d. BLM will manage BLM Conservation Lands Approved for Compensatory Mitigation in a manner that is consistent with the land use designations, management actions and authorizations (e.g., NLCS, ACEC, Wildlife Allocation, etc.) applicable to those lands, in accordance with Federal law, regulations, and policy and the terms and conditions of any completed instrument prepared under the terms of this agreement (see Section C.5.) for the term of the instrument, including any amendments or extensions to that term, so long as CDFW continues to recognize its compensatory mitigation value.

e. To the maximum extent consistent with Federal law, regulations, and policy, BLM will seek to design Section C.5. instruments and maintain the land use designations on BLM Conservation Lands Approved for Compensatory Mitigation for the duration of the impacts. BLM will confer with CDFW at least ninety (90) days prior to initiating any action to amend or otherwise change the land use designations (e.g., NLCS, ACEC, Wildlife Allocation, etc.) on the BLM Conservation Lands Approved for Compensatory Mitigation. Both the BLM and CDFW acknowledge that the BLM may need to amend its land use plans and that such amendments could affect land use designations and land management practices. Consistent with Federal law and regulation, the BLM intends that any subsequent land use plan amendments will protect the biological values on BLM Conservation Lands Approved for CDFW Compensatory Mitigation to a level sufficient to meet those CDFW requirements for compensatory mitigation.

f. If a third-party applicant proposes a project on BLM Conservation Lands Approved for CDFW Compensatory Mitigation, the application will be subject to the applicable land use plan, land use designations, and any valid existing rights (including previously-issued land use authorizations listed in Section C.4.b. and cooperative agreements listed in Section C.4.c.).

g. If the BLM receives an application for a project on BLM Conservation Lands Approved for CDFW Compensatory Mitigation and subject to one of the land use authorizations listed in Section C.4.b. or agreements listed in Section C.4.c., the BLM will inform the third-party applicant proposing to develop those lands of the

extent of the existing use as compensatory mitigation, both temporally and spatially, prior to processing an application for a right-of-way or other authorization for development or use. Before approving any such application:

i. The BLM will confer with CDFW to discuss whether and to what extent granting the application would impair or be inconsistent with the mitigation value of the lands, and whether alternative mitigation for those values is available.
ii. The BLM will invite CDFW to be a Cooperating Agency under NEPA for purposes of the application for actions requiring an EIS-level analysis. CDFW may request Cooperating Agency status for other NEPA actions, such as Environment Assessment-level analysis.
iii. The BLM, considering the commitment to mitigation value of the lands in question, will either:
    1. Deny the proposed project based on inconsistency with the Land Use Plan and commitments already made for compensatory mitigation without further analysis, or
    2. Propose an alternative for analysis that considers appropriate means of limiting impairment or inconsistency with the mitigation values, or
    3. Include an alternative in any further analysis (no action) that would deny the proposed project.
iv. The BLM, when issuing a decision on the proposed project, will document the following:
    1. The basis for approving or denying the proposed project or requiring any additional mitigation measures or design features,
    2. Site-specific factors from the analysis that support whether to approve, approve with modifications, or deny any such application.
    3. If the BLM approves the proposed project, how compensatory mitigation values on the lands previously relied upon by CDFW as contributing to its mitigation requirements for specific projects are sustained; and
    4. If BLM approves the proposed project, how mitigation values addressed in (i) CESA's requirement for full mitigation of impacts to state-listed species as set forth in Fish and Game Code section 2081(b), (ii) Section 1600's requirement for "reasonable measures necessary to protect the [fish and wildlife] resource" as set forth in Section 1603, (iii) the NCCPA's requirements for conservation and protection of habitat reserves as set forth in Fish and Game Code section 2820(a)-(b), and (iv) CEQA's requirement for "feasible

mitigation measures" that would substantially lessen significant environmental impacts as set forth in Public Resources Code section 21002 will be protected through appropriate terms and conditions on any subsequent rights-of-way granted or by other actions; and

5. Consistent with Title 43 U.S.C. Section 1765, that any subsequent right-of-way granted for use of any BLM Conservation Lands Approved for CDFW Compensatory Mitigation include terms and conditions that both "minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment" and "require compliance with State standards for public health and safety, environmental protection, and siting, construction, operation, and maintenance of rights-of-way for similar purposes if those standards are more stringent than applicable Federal standards." BLM will ensure that durability terms and conditions that integrate the state standards referenced above in Section C.6.g.iv.4, that have already been applied under a mechanism described above in Section C.4 and that CDFW has relied upon in the written record for a permit for partial or full satisfaction of mitigation requirements imposed by those provisions of state law, would not be affected by any subsequent right-of-way authorization unless the holder, the BLM and CDFW consent to a modification.

v. If BLM expects to approve any such project, BLM will confer with CDFW before issuing a decision to discuss existing compensatory mitigation commitments, whether and to what extent granting the application would impair or be inconsistent with the mitigation value of the lands, the effectiveness of proposed alternative mitigation for those values, and the appropriate term or duration for any offsetting mitigation.. In the event the BLM approves an application or action on BLM Conservation Lands approved for compensatory mitigation purposes that impacts the values being mitigated for or makes that mitigation less effective, the BLM and CDFW will further confer to identify actions to offset any impacts to previously approved compensatory mitigation from the subsequently proposed project. Such offsetting actions may include, but are not limited to identifying, evaluating, and applying tools and actions on additional BLM Conservation Lands to provide durable, long-term assurances that they will be protected and managed. Prior to the BLM's approval of a subsequently proposed project, the BLM and CDFW

will cooperate and coordinate to the maximum extent possible to achieve the goals of this Agreement.

h. Projects proposed by the BLM on federal public lands will be subject to and consistent with the applicable land use plan, land use designations, and any valid existing rights (including land use authorizations listed in Section C.4.b. and cooperative agreements listed in Section C.4.c.), as well as Federal law, regulations, and policy. If the BLM is considering a project on BLM Conservation Lands approved for compensatory mitigation purposes, it will confer with CDFW as early as is feasible to design the project in a way that avoids or minimizes impacts to previously approved compensatory mitigation and follow the procedures set forth in Section C.6.g.

7. CDFW Considerations for BLM Conservation Lands Approved for CDFW Compensatory Mitigation. Consistent with the goals of this Agreement and its authority as defined in State law, regulations, and policy, and in acknowledgement of the importance of CDFW's management of wildlife, CDFW agrees to:

   a. Manage wildlife on BLM Conservation Lands Approved for CDFW Compensatory Mitigation in cooperation with the BLM in a manner that is consistent with the applicable land use plan, the land use designations, any applicable Section C.5. instrument, and the Department of the Interior Fish and Wildlife Policy (43 C.F.R. Part 24);

   b. Provide advice and counsel to the BLM with respect to wildlife management on BLM Conservation Lands Approved for CDFW Compensatory Mitigation; and

   c. Consistent with Section C.5.c, recognize the BLM Conservation Lands Approved for CDFW Compensatory Mitigation toward the mitigation requirements of those projects for which the BLM approved management actions or authorizations are made.

8. Notification.

   a. Notice to Holders of Land Use Authorizations for Mitigation Actions. The BLM and CDFW will provide written notification to the holder of any land use authorization for any compensatory mitigation action, as described in Section C.6.e., upon the BLM's receipt of an application for a right-of-way or other authorization, CDFW's receipt of an application for any permit or approval, or the initiation of any activity by the BLM or CDFW themselves if the application

received or activity proposed has the potential to affect the BLM Conservation Lands Approved for CDFW Compensatory Mitigation. Both the BLM and CDFW agree to meet in a timely manner with the holder of the land use authorization, if a meeting is requested by either BLM, CDFW or the holder of the land use authorization, to discuss the application or activity and its potential impact to the compensatory mitigation action.

b. Annual Report on Project Approvals relating to BLM Conservation Lands Approved for CDFW Compensatory Mitigation. The BLM and CDFW shall provide each other with and make available to the public, on or before January 31 of each calendar year, a written account of all rights-of-way, permits, authorizations, and other approvals issued by the BLM or CDFW for projects and activities occurring on or potentially affecting BLM Conservation Lands Approved for CDFW Compensatory Mitigation during the prior calendar year.

9. Dispute Resolution.

a. Dispute Resolution Process. The BLM and CDFW recognize that disagreements concerning implementation or interpretation of this Agreement may arise from time to time and agree to work together in good faith. In the event of such a disagreement, it is in the best interest of each agency to resolve the issue at the lowest possible level of each organization. The first level will involve the BLM Field Office Manager and the CDFW Environmental Program Manager. If resolution cannot be reached at that level, the next level will involve the BLM District Manager and CDFW Regional Manager. If resolution cannot be reached at that level, the next level will involve the BLM State Director and CDFW Director or Chief Deputy Director. Both agencies agree to make the appropriate individual or their representatives available within a reasonable timeframe to discuss the disagreement.

b. Proposed BLM Land Use Plan Decisions. Title 43 CFR Section 1610.3-2(a) requires BLM land use plans to be consistent with officially approved or adopted resource related plans of state governments, so long as the land use plan decision is also consistent with the purposes, policies, and programs of Federal laws and regulations applicable to federal public lands. The BLM and CDFW will seek to reconcile applicable state and federal land use and wildlife management planning decisions wherever this agreement is applied.

c. Final Determinations on Federal and State Law. Notwithstanding anything in this section, the BLM remains the final decision maker for interpretation and

implementation of applicable federal law, and CDFW remains the final decision maker for interpretation and implementation of applicable state law, to be applied on BLM-administered public land.

D. ADMINISTRATIVE PROVISIONS

1. Effective Date. This Agreement is made and entered into as of the last date of signature by and between the BLM and CDFW.

2. Termination. Either the BLM or CDFW may terminate this Agreement by delivering to the other agency a written notice of intent to terminate at least ninety (90) days prior to the proposed termination date. Termination of this Agreement shall not affect any authorizations by BLM pursuant to Section C.6. of this Agreement. Notwithstanding any termination of this Agreement, the land use authorizations for compensatory mitigation lands shall continue to be subject to the terms and conditions of and law applicable to each individual authorization.

3. Amendment or Modification. This Agreement may be amended with the written agreement of the BLM and CDFW.

4. Applicability of State and Federal Law. Notwithstanding any other provision in this Agreement, nothing in this Agreement is intended to be nor shall it be interpreted to be inconsistent with any applicable Federal or state law or regulation.

5. Funding. This Agreement does not obligate any funds from either Agency. Subject to the availability of funds, the BLM and CDFW each agrees to fund its own expenses associated with this Agreement. Nothing contained in this Agreement shall be construed as obligating any Federal agency to any expenditure or obligation of funds in excess or advance of appropriations, in accordance with the Anti-Deficiency Act, 31 U.S.C. §1341.

6. Elected Officials Not to Benefit. No member of or delegate to Congress shall be entitled to any share or part of this Agreement, or to any benefit that may arise from it.

7. FACA. The BLM and CDFW will comply with the Federal Advisory Committee Act to the extent it applies.

U.S. BUREAU OF LAND MANAGEMENT

Signature

10/2/2015
Date

State Director
Title

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Signature

OCT. 2 2015
Date

CHIEF DEPUTY DIRECTOR
Title

State of California
Department of Fish and Wildlife

Memorandum

Date: October 22, 2015

To: CDFW Leadership
CDFW Environmental Program Managers
CDFW Office of General Counsel

From: Kevin Hunting
Chief Deputy Director

Subject: **Application of the 2015 Durability Agreement between Department of Fish and Wildlife and Bureau of Land Management**

Purpose

The purpose of this memorandum is to provide guidance to regional staff on the application of the 2015 Durability Agreement (DA) in the context of NCCP or Conservation Strategy development and for use with CESA Individual Take Permits Lake and Streambed Alteration Agreements, agreements under the Native Plant Protection Act (FGC 1900), and for mitigation requirements imposed through CEQA.

Background

Almost half of California is comprised of public lands making this land base an important component of effectively managing wildlife populations in the state. Of these public lands, the Bureau of Land Management (BLM) manages about 15 million acres, many of which are essential to the management, conservation, and recovery of declining species. The California desert in particular highlights the potential for BLM lands to contribute, in a lasting way, to endangered species management, conservation, and recovery.

Lands administered by the BLM are often integrated into regional landscape level plans like Natural Community Conservation plans (NCCP) and incorporated by local government into open space and green space planning. Similarly, BLM lands offer passive connectivity opportunities and corridors for wildlife movement, which buffer against climate change induced habitat changes. In short, BLM lands are already an important part of land-based conservation in California.

Under the Federal Land Policy and Management Act (FLPMA), the BLM has several available designations, as part of the land management planning process, that convey specific wildlife and habitat protection benefits on BLM land. These include Areas of Critical Environmental Concern (ACEC), Desert Wildlife Management Areas (DWMA), and more recently, a designation recognizing unique landscape values called National Landscape Conservation System (NLCS). While these designations are an important part of the conservation landscape on public lands, they are administrative in nature and, with the exception of NLCS lands, can therefore be modified or eliminated through the FLPMA Land Use Plan Amendment process. As a consequence, the duration of surface conservation values for sensitive species habitat on BLM land over time may vary considerably. Some land use planning designations may be sufficient

for providing assurances over time for general conservation purposes or as part of the conservation matrix or reserve network in an NCCP. However, these designations alone fall short of providing the perpetual benefits required as part of compensatory mitigation for an Incidental Take Permit (ITP) issued under the California Endangered Species Act (CESA) or as part of the permanent conservation commitment required for an NCCP. This limitation has put many important lands off limits as perpetual sensitive species habitat.

Beginning in 2012, DFW and BLM embarked on an effort to identify opportunities in existing law and regulation to remedy this situation. The manifestation of this initial effort was the November 27, 2012 Memorandum of Understanding between BLM and DFW (often referred to as the "Durability MOU"), which identified a series of tools that currently exist in federal law and regulation that could be utilized by BLM to extend (in time) the benefits of surface habitat values beyond what would typically be achieved through administrative and land use planning designations. The agreement focused on the California desert region and was catalyzed by the development of the Desert Renewable Energy Conservation Plan (DRECP). Now in 2015, DFW and BLM have re-published the MOU as a formal durability agreement with statewide applicability ("Durability Agreement" or "DA"). This Durability Agreement was executed on October 2, 2015 and became effective as of that date. In summary, the Durability Agreement supports the use of the following durability approaches:

Types of Durability Tools			
Approach	*Citation*	*Duration*	*Allowable Acreage*
Rights-of-Way	FLPMA, Title 43 U.S.C. § 1761, et seq.; Title 43 C.F.R. § 2800	Rights-of-way "shall be limited to a reasonable term in light of all circumstances concerning the project"	No limit.
Permits, Leases, or Easements	FLPMA, Title 43 U.S.C. § 1740, et seq.; Title 43 C.F.R. § 2920	Leases are limited to a term designated by BLM consistent with amortization of the capital investment. Permits are limited to 3 years. Easements are limited to a term designated by BLM.	No limit.
Withdrawals	FLPMA, Title 43 U.S.C. § 1714	The Secretary of the Interior may authorize withdrawals of up to 5000 acres "for such period of time as he deems desirable for a resource use" and for up to 20 years for any other use. Congress may authorize withdrawals exceeding 5000 acres for up to 20 years.	The Secretary of the Interior may authorize withdrawals of up to 5000 acres. Withdrawals exceeding 5000 acres must be approved by Congress.

Approach	*Citation*	*Duration*	*Allowable Acreage*
Leases	Recreation and Public Purposes Act, Title 43 U.S.C. § 869, et seq.; Title 43 C.F.R. § 2740, et seq.	All purchases are permanent. Leases for state agencies are limited to 25 years. Leases for non-profits are limited to 20 years.	A state may purchase up to 6400 acres annually for recreation and up to 640 acres annually for each public purpose other than recreation; non-profits may purchase up to 640 acres annually for recreation and an additional 640 acres for all other purposes. There is no limit to the amount of land that may be leased.
Sikes Act Agreements and accompanying HMPs	Sikes Act of 1974, Title 16 U.S.C. § 670g-o.	Indefinite term.	No limit.
Cooperative Agreements for Management	FLPMA, Title 43 U.S.C. § 1737(b).	Indefinite term.	No limit.
Relinquishment of Grazing Leases	Omnibus Public Lands Management Act of 2009, Public Law 111-11, March 29, 2009; Consolidated Appropriations Act of 2012, Public Law 112-74, December 23, 2011.	Permanently allocates the forage to wildlife use	No limit.

Policy

It is the policy of DFW to consider use of one or more of the durability tools described in the DA consistent with the following principles:

General Provisions

The decision to authorize use of a DA tool on BLM lands is within the BLM's authority, while the decision to credit use of a DA tool for state compensatory mitigation purposes is within DFW's authority. As a result, any decision to use a DA tool for compensatory mitigation or other uses must involve the collaboration and agreement of both the BLM and DFW. DFW will need to engage counties and cities when they are acting as CEQA lead agencies to ensure that the CEQA document's discussion of

the use of DA tools, if any, accurately reflects the decisions by the BLM and CDFW as to whether a DA tool is appropriate in the context of the project at hand.

Conservation Planning and Connectivity Applications

1) Generally, the DA and associated tools are intended for and best suited for application to support conservation for large projects or planning efforts. As such, when used in this context, they must be compatible with the planning scale, support recovery of declining and vulnerable species, and be consistent with existing conservation strategies and plans.
2) For conservation planning applications, application of the DA tools on BLM land would complement or complete a connectivity, linkage, or climate change adaptation requirement for an NCCP.
3) Use of the DA tools should be consistent with our Policy on Publicly Owned, Department Owned, and Conserved Lands. http://dfgintranet/Portal/LinkClick.aspx?fileticket=gbRoFNDx19g%3d&tabid=802

Compensatory Mitigation Applications

1) Use of the DA tools to meet state requirements as part of a compensatory mitigation package is at that sole discretion of DFW. Application of any of these tools does not change existing obligations and requirements under CESA or its implementing regulations for authorizing incidental take, meeting the CESA full mitigation standard, or implementing CESA policy or practice. Similarly, application of a durability tool does not change any other existing statutory or regulatory requirements relating to mitigation lands and funding, including the provisions of Government Code Sections 65965-65968 (SB 1094) and Probate Code Sections 18501-18510 (Uniform Prudent Management of Institutional Funds Act) relating to endowments.
2) DA tools should be applied only after all minimization and avoidance measures are employed.
3) The BLM lands which would be the target of DA tool application support habitat values important to achieving the goals of the desired action (e.g., present the best conservation outcome for the target species or resource value).
4) Use of the DA tools, either exclusively or in conjunction with private land actions such as an easement, will result in a better conservation outcome for the target species than if the mitigation was achieved by other means.
5) DFW should always select the tool that would result in protection of target biological values over the longest time span and, at a minimum, for the duration of the impacts, including restoration of an impacted site.
6) Whenever possible, DFW should seek to employ a third party when using these tools to be party to the rights in the agreement, hold compensatory mitigation funds, and, at DFW's discretion, oversee implementation and monitoring.
7) Use of the DA tool tools should be consistent with our Policy on Publicly Owned, Department Owned, and Conserved Lands. http://dfgintranet/Portal/LinkClick.aspx?fileticket=gbRoFNDx19g%3d&tabid=802

8) The Durability Agreement and the tools incorporated into the agreement are intended to provide additional flexibility for DFW as it considers both regulatory and non-regulatory approaches to land-based conservation across the California landscape. Application of the DA is specific to individual project and planning circumstances and is not intended to replace more traditional conservation easement approaches to perpetual conservation.

In its simplest terms, application of specific element(s) of the Durability Agreement should take into account the importance of conservation of a target species, natural community, or other conservation elements on BLM land and the acknowledgement that the conservation values may not be guaranteed in perpetuity. As stated above, in some cases land-based conservation for species recovery or to match the values lost from a given impact (compensatory mitigation) would strongly implicate federal lands as the best approach because the federal lands support the best remaining values for the target conservation element. In this case, application of a DA tool that provided the best and most durable conservation would be warranted. However, even in cases where BLM lands may offer the best conservation option, compensatory mitigation on BLM lands alone may not be sufficient to satisfy CESA mitigation standards, and it would be appropriate to consider a multi-faceted mitigation package that would include both use of a DA tool and other, more traditional mitigation actions.

On the other hand, federal lands that are part of a larger reserve design complex that does not involve a state regulatory action (compensatory mitigation) and is being considered as part of public conservation investment might not require additional durability beyond existing BLM designations. Within the context of the NCCP Act, some level of durability beyond existing BLM designations may be warranted to provide the basis for natural community conservation findings related to permanent conservation.

Staff considering use of DA tools for conservation and/or mitigation actions should work with HQ (HCPB Branch Chief) in developing the necessary agreements and to track their progress.